PORT – DOS

WELCOME TO THIS USERPROMPT GUIDE

The objective of the Guide is simple : to enhance your use of your
Apricot Portable system.

The Guide is a supplement to the documentation you received
with your Apricot hardware and software, not a replacement or re-hash.

The Guide addresses two areas: those you are likely to be having
problems with due to poor documentation; and those tips and tricks
that experience brings.

Readers will be at different points on
the microcomputing learning curve and inevitably some of the Guide
will be too simple, some too technical. However the Guide costs the
same as one microfloppy-disk and if it saves just one hour
of your time, ever, it has paid for itself.

MS-DOS version 2.11 on the PORTABLE

The Apricot Portable - a sales flop - was to be repackaged as the "Apricot FP" with Digital Research's GEM front-end, but this has now been dropped and remaining stocks of black Apricot Portables have been sold off through Dixons stores.

This Guide covers MS-DOS as at Winter 85/86 on the Apricot Portable. It applies to either the latest Portable Master Disks RAM BIOS VR1.3 or the RAM BIOS VR1.6 distributed with the Portables sold off through Dixons.

MS-DOS is a registered trademark of MicroSoft Corporation, a major American software firm. MS-DOS, the MicroSoft disk operating system, and IBM DOS (usually known as "PC-DOS") which was developed from it are now the most popular microcomputer operating systems. MS-DOS (PC-DOS) has been through several different versions : version 1.0, 1.n, version 2.0n, version 2.1n and now currently on the IBM DOS 3.0. Apricot have been a world-leader in releasing MS-DOS 3.1 on their Point 32 network - it provides networking features but that is another story (dealt with in the UserPrompt .32 Guide). An ordinary Apricot Portable operates under version 2.11.

Other than correcting the known bugs in MS-DOS 2.00, the main advantage of MS-DOS 2.11 over version 2.00, which was initially the Apricot PC/Xi operating system, is that it provides "support for foreign languages". This means that dates can be in the UK format of date then month then year, not the American month, date, year. (More on pages 11 & 13.)

That the Portable runs MS-DOS 2.11 means that there is <u>potential</u> compatibility with other microcomputers running MS-DOS (or IBM's running PC-DOS). The Apricot PC/Xi is now provided with an emulator program which mimics the IBM to a limited extent (further details in the UserPrompt ACTIV Guide which covers the latest version of the PC/Xi master disk software).

MS-DOS performs commands. As explained in the Portable Starter Pack on p39 and in the MicroSoft Pack p1-4 there are two types of command : those which are <u>internal</u> (part of MS-DOS itself), and those which are <u>external</u> - not part of DOS but provided by external separate programs.

With your Apricot Portable you will have received various of the following manuals which should, but do not, fully explain these commands (brackets = versions to which cross-references in this Guide are to):
- ✓ - Apricot Portable Starter Pack (SP/9.84/5M/AT)
- ✓ + ACT Portable Starter Pack Supplement [20pp supplement]
- ✓ + Ramdisk sheet (part no 11582071)
- ✓ - Apricot Applications Pack (SP/8.84/14M/AT) [Dixons]
-    - Apricot Async User Guide (KNP/0485/19.4M/C) ✳
-    - Apricot Software MicroSoft Pack (11265371 - SP/9.85/9.5M/C)
-    - Apricot Software B-TRAN (15th May 1985) [Dixons]
- ✓ - several quick-reference Summary cards

UserPrompt's Guides are intended to supplement and clarify the Apricot's literature. We currently publish 21 guides on using the PC, Xi, Xen, Point32, F1, F2 and Portable, as well as WordStar and SuperCalc.

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DRIVES, DIRECTORIES & FILES

Crucial to understanding how to use a MS-DOS computer such as the Apricot Portable, and how to save time and effort, is an understanding of what drives, directories and files are.

DRIVES:

Drives are always known by a letter and a colon : eg A:. They are devices that DOS understands how to pass files to/from. Thus the only drive on a Portable is the A:. A drive need <u>not</u> be a physical disk drive though : eg a RamDisk can be set up in RAM memory and this will act as an additional drive - known as B: on a Portable.

DOS keeps track of the "logged" or "default" drive and when DOS needs to know a drive name, and you omit it, it will substitute the logged drive.
eg   A>DIR B: [RET]   gives a directory of the specified B: drive
     A>DIR [RET]   gives a directory of the logged A: drive

DIRECTORIES: (of especial importance to hard-disk users)

A directory is an area of disk where MS-DOS keeps track of the files you create on that disk. Every disk has one main, or "root" directory, but you may create other "sub-directories". An example is the DVS sub-directory on Master Disk 2 of the Portable's disks.

DOS keeps track of the "current" directory on <u>all</u> drives on the system, not just the logged drive. On a floppy disk system as long as you do not create sub-directories you can forget all about directories. On a hard disk Apricot Xi sub-directories and an understanding of them are essential - they are covered in detail in the UserPrompt Xi & XI Guides.

A FILE

At the end of the day it is <u>a file</u> that using a microcomputer centres around. A computer gets/saves information to/from files. That information might be special program instructions, or it might be data (numeric, textual, graphic) which you, the user, have generated or typed

Each file in a directory must have a unique name with the structure FILENAME.EXT : a filename of upto 8 characters, then a full stop, then upto 3 characters of extension. There are standard abbreviations to use as a file extension but you do not <u>need</u> normally to ɔrry about this.

A FULL FILE-SPECIFICATION:

To refer to a file in complete detail requires the following:

Required:	Length:	Default:
drive specifier	1 character then :	logged drive
path	upto 64 characters	current directory
filename	upto 8 characters then .	<no default>
extension	upto 3 characters	no extension

egs   A:\AUTOEXEC.BAT   MORE.COM   A:\SALES\WS\JANSALES.DOC

THE OPERATING SYSTEM ON DISK

With the Portable the MS-DOS operating system on a disk comprises the following (NB different sizes for BIOS VR1.3 versus BIOS VR1.6):

"Hidden" system files:

Filename		BIOS 1.3	BIOS 1.6	File contents/purpose
IO	SYS	7168	7168	"BIOS" which deals with controlling and communicating with the Apricot hardware
HEADER	SYS	128	128	details of font, logo and keyboard (This file was not hidden on our Dixons BIOS 1.6 disks)
FONT	SYS	12800	10240	font and logo data
KEYTAB	SYS	1024	1024	keyboard data
MSDOS	SYS	17408	17408	major part of MS-DOS operating system
volumelabel		0	0	the volume label in the root directory

Normal "visible" files:

Filename	Filesize		File contents/purpose
COMMAND COM	16512	16512	the (internal) command processor
CONFIG SYS	128	128	configuration settings for IO.SYS

The actual space taken up on a double-sided disk is:

Space available	728064	728064
Sub-total 6 hidden files	39936	36864
Sub-total 2 normal files	18432	18432
Free space on disk	669696	672768 bytes

Later sections in this guide cover how to customise the operating system for your printer; how to include the keyboard, and font of your choice; and how to customise Activity to your own applications.

How to copy the MS-DOS operating system to a disk

When you turn on the Apricot Portable you have to "boot" it from a disk with MS-DOS on it. To be able to boot from your own disk select Activity's DISK icon and then the Format Disk and Copy DOS icons to copy MS-DOS from one of your Portable Master Disks. The operating system can not be copied to a disk using the internal MS-DOS COPY command for two reasons:
i.   the main part of the operating system consists of "hidden" system files (as listed above) which COPY cannot copy.
ii. the system files must be the first files on a disk. Hence you have to copy the operating system to a "blank data disk" : ie one that has been formatted but no files have ever been copied onto it.

Q: Why on the Portable when you exit from running a program are you sometimes asked to "Insert COMMAND.COM disk in drive".

A: So as to maximise memory available to the user COMMAND.COM will allow part of itself to be overwritten by your program. Once you leave the program it needs to restore the complete COMMAND.COM which it will do automatically if the file is available on disk and hence, if it is not, the request for a disk with COMMAND.COM on it.

HOW MS-DOS USES DISKS

Some readers will find this section very technical but should make an effort to understand its contents. Knowing how MS-DOS on the Apricot Portable uses disks will take you that bit further towards understanding all MS-DOS microcomputers and how they work.

Example: a floppy disk which had had a lot of files on it will often result in a program running more slowly than if a disk with few files on it were used. This is because the read head in the diskdrive often has to access many different areas of the disk when reading one single file.

Some standard terminology about disk usage:

sector	:	smallest allocatable storage unit/area on the disk 512 bytes (characters) on all Apricots
cluster	:	actual allocatable unit (ie may be more than 1 sector) ie a file just 1 byte long will be allocated an entire cluster on disk (ie at least 512 bytes of space)
FAT	:	file allocation table where DOS keeps track of which sectors have been allocated (there are 2 copies of the FAT)
chain	:	the set of clusters chained together by means of the FAT and which make up a file on disk
directory	:	where DOS keeps the filename, suffix, size, starting sector, date and time when file created or last modified

Specifications:

SINGLE SIDED disk format (eg Fle, old PC):
70 Tracks, each of 9 sectors = 630 sectors
A sector = 512 bytes
Total disk capacity = 322,560 bytes (315Kb)
A cluster = 1 sector ie 512 bytes
Sector allocation: Boot 0, FAT 1-4, directory 5-12, data 13-629
Root directory may contain upto 128 files

DOUBLE SIDED disk format (eg Portable, Fl, PC duo, Xi FD)
80 Tracks per side, each of 9 sectors = 1440 sectors
A sector = 512 bytes
Total disk capacity = 737,280 bytes (720Kb)
A cluster = 2 sectors ie 1024 bytes
Sector allocation: Boot 0, FAT 1-6, directory 7-17, data 18-1439
Root directory may contain upto 176 files

APRICOT COMPATIBILITY

The micros in the Apricot range use identical disk formats for single-sided and double-sided disks so that you can read files from disks regardless of whether they were formatted in an Fle, Fl, Portable, PC, Xi or Xen. You may not boot up the Portable from another model's disk containing an MS-DOS operating system as the different models require booting from their own BIOS's operating system.

How MS-DOS uses disks   (Continued)

DISKS & DISK DRIVES

The first sector on a disk is always a boot sector so an "X99" error message is displayed on screen whenever an attempt is made to boot from a disk which does not contain an operating system.

The Portable's double-sided disk drive may read diskettes which have been formatted as either single or double sided.

An Fle's single-sided disk drive can not read disks formatted as double-sided on an Portable or PC/Xi.

The difference between a disk branded as "double-sided" or "single-sided" is what the manufacturer is willing to promise you. If you are willing to experiment you may successfully format a branded single-sided disk to be double-sided. Be warned though that you could very well end up losing hours/days of work in unreadable files for the sake of a couple of pounds - genuine false economy!

Obviously a disk branded as double-sided can be under-utilised by formatting as single-sided if required.   Incidentally the Sony microfloppy diskdrives in Portable's are said by Sony to be maintenance free (ie head cleaning not required) provided that you use quality (Sony) disks.

Allocation of disk space

Files are saved on disk in the first cluster available (ie not currently in use). This means that as a disk is used and files created and then deleted the freed sectors are re-used. New files therefore become spread over the disk and such files are known as non-contiguous files. You can use CHKDSK *.* [RET] to check for them.

What happens when you boot (ie how DOS starts up)

The stages which the Portable goes through are:

1. request floppy disk (& for Time/Date to be set)
2. check floppy disk has boot tracks : report " X 99 " if not
3. read in BIOS from disk - the hardware/MS-DOS interface
4. effect CONFIG.SYS - your system customisation
5. read in MS-DOS - the actual operating system
6. load COMMAND.COM into memory - the user interface for MS-DOS
7. run AUTOEXEC.BAT if it exists, otherwise ask for new Date/Time

This guide includes detail relevant to several stages of this:

3. how to configure the operating system (page 7)
4. the role of CONFIG.SYS and what to put in it (page 10)
6. uses of the internal commands of COMMAND.COM (page 12)
7. tips on AUTOEXEC.BAT (page 22)

One of the big plus points about the Apricot Portable from a user point of view is that you can install the operating system to suit your personal preferences, the applications you want to run, and the printer(s) you have. This is done with the Activity UTILITIES System Configurator.

The drawback of this flexibility with Apricot MS-DOS is in terms of memory usage - it takes up around 65Kb of RAM, whereas for comparison IBM DOS takes only around 40Kb on an IBM PC. Obviously this has less significance the more RAM your Portable has.

Activity UTILITIES System Configurator   (Portable Starter Pack p28)

Why Use? When you boot up from a disk (eg Master Disk 1) various aspects of the Apricot are set by what is read in from the copy of the MS-DOS operating system on that disk:
- printing : either via PARALLEL or SERIAL ("RS232") socket
- serial port : speed and various other settings
- noise : volume of clicks and beeps emitted
- what key produces what keystrokes ("keyboard table")
- how characters look on screen ("font")

Defaults The operating system provided by ACT on the Master Disk(s) with your Apricot Portable is set at:
- printing : PARALLEL socket
- serial @ 9600 baud, 8 bits, 1.5 stop bits, no parity
   no protocols
- noise : medium/loud volumes
- ACT's keyboard table
- ACT's font

You do not have to change these but you may need or wish to.

Our   Rather than repeat what ACT tell you about the utility we seek
Approach below to supplement the Starter Pack (to correct the mistakes in it, and to explain the significance of some options) so you should read this in conjunction with ACT's literature.

Disks   You can configure the operating system on any disk to which
Needed   you have copied DOS but you will first need to run the Activity UTILITIES System Configurator program from your working copy of Master Disk 1 or 3.

Files   The DOS disk to be set up must contain an operating system.
Needed   This would have been copied onto it using Activity DISK Format Disk & then Activity DISK Copy DOS. If you intend to incorporate/use a different keyboard/font then the disk will also need to contain the appropriate file(s):
          yourfile.KB   the new keyboard table you want
          yourfile.CHR   the new font you want
       See page 18 for how to originate such .KB and .CHR files.

Usage   Once you have selected the Activity UTILITIES System
        Configurator icon and got the Folder/Printer/Serial/Speaker
        and the Help icons at the top of screen you can remove the
        Activity disk and replace it with the disk containing the
        operating system you wish to setup.

+/-   Although not mentioned in the Starter Pack you can use the +/-
        keys on the numeric keypad to change selected options up/down.

Printer Icon

Choice   The Apricot can be set to drive a printer through either its
         parallel port or through its serial port (both behind the
         "cable manager" - see illustration in the Starter Pack p4).

Which?   Normally you would buy and use a parallel printer and leave
         the serial socket free for communications with other
         computers. Parallel printers are far easier to get working!

Yes/No   We have always said NO to paper-out and printer fault and
         never had any problems with a wide range of parallel printers.
         Saying YES meant that the printer never printed correctly.

Parallel If your parallel cable only connects some of the 36 pins you
Cable   may not get satisfactory printing with some printers.

Serial   If you select Serial the speed settings etc. are determined by
         the next icon ...

Serial Icon

"Panic" If the options available mean nothing to you and you have a
         serial printer which does not yet work, then panic now and get
         your dealer back to sort it all out!

Which?   Remember that usually you can amend the serial settings at
         either the computer or at the printer (typically by DIP switch
         settings) - whichever is easier ...

Serial   A serial printer cable that works with a Sirius should also
Cables   work with an Apricot, but other micro's serial printer cables
         probably will not.

Speaker Icon

Bell   This is computer jargon for the "beep" noise which the Apricot
         can make. You want it noisy enough so you notice when a
         program beeps to warn you of something, but quiet enough so as
         not to annoy others in your office.

Keyclick This is simply the noise made by the speaker in the main unit
          of the Portable whenever a key on the keyboard is pressed.
          Purely a matter of personal preference how you set this.

Folder Icon

Choices   The options available are best explained as follows:

          Starting by selecting one of 3 different folder icons

          - "Configuration" (ie Printer/Serial/Speaker set above)
          - a selected Keyboard table .KB file
          - a selected Font .CHR file

          you can either amend the Operating System

          - temporarily (ie the operating system currently in the
            Apricot and which will be forgotten when either the power
            is turned off or the computer is rebooted) by moving the
            folder to the "System" icon that looks like a computer
          - permanently (ie update the DOS on the disk) by moving the
            folder to the "Disk" icon that looks like a large
            diskette (NOT the Activity DISK icon at the foot of the
            screen)

Trial   You could try out the settings and the keyboard/font by first
          copying to the System icon and then trying the Apricot.
          If they are OK you could then run the Configurator again and
          copy the settings to disk.

USING THE PARALLEL & SERIAL PORTS

Each Apricot Portable has two "ports" on its back. The elementary
difference between the parallel socket and the serial socket is the way
in which a character of information (a byte) is transferred : with a
parallel interface the 8 bits making up the character are all
transferred simultaneously; one after another with the serial interface.

The parallel port is normally used to drive a printer with a Centronics
parallel interface. The serial port can be used for a serial printer
but it would normally be used for "communications" however. This may be
to connect to a modem/acoustic coupler to link to public services such
as Prestel, Telecom-Gold etc, or to transfer data files between
different computers. You can get file transfer programs from ACT which
allow an Apricot (using the Async now provided with each Portable) and
an IBM/Sirius/Apple to transfer files.

CONFIG.SYS

Why Use? The file CONFIG.SYS is an important feature of MS-DOS 2.11 which enables the user to CONFIGure the MS-DOS SYStem closer to his personal and hardware requirements.

Boot Up When you boot up the Portable from a disk an important stage of that boot (see list on page 6) is for the commands in the file CONFIG.SYS to be effected.

Manual CONFIG.SYS is poorly covered in the MicroSoft Pack section 17.3 p17-14 (Section 17.2 p17-4 of later editions).

Created Using the Activity DISK Copy DOS icon to copy the operating system to a disk will copy 7 files to the disk including two "visible" files : COMMAND.COM and CONFIG.SYS.

View To look at the file simply use TYPE CONFIG.SYS [RET] to display it on the screen. The ACT provided files on the master disks [4 master disks from Dixons, otherwise 3]:
      buffers=14   (buffers=10 on Dixons Master Disk 2)
      country=44
      device=mouse.sys   (this line omitted from Dixons disks)
   CONFIG.SYS on Master Disk 2 contains an additional line:
      device=speech.sys

Required? No - you can still boot from a disk that has had its CONFIG.SYS deleted. Various settings will then take their default values (see foot of next page). You should not delete CONFIG.SYS as (a) the Portable would perform far slower; (b) dates would be USA style; (c) the mouse could not be used.

Editing It As CONFIG.SYS is such a short file you fill find it quickest to create a new one using COPY CON CONFIG.SYS [RET]. See MicroSoft Pack p4-6 for an example of creating a file thus.

BUFFERS - To cut disk reading delays

What ? "Buffers" are units of 528 (512+16) bytes of RAM memory allocated for DOS to temporarily store sectors (512 bytes) of data being read from/written to disk. When required to read a sector from disk DOS first checks the buffer area to see if a copy of that sector is already in memory. The use of such buffers is why DOS does not need to access the disk twice if you ask for a DIR and then ask for the DIR again : ie buffers speed up disk read operations. (Although having too many buffers may start to slow it down again.)

Advice What your CONFIG.SYS should contain will depend on your disk formats as you should have at least as many buffers as a disk's DIRECTORY and one FAT (see page 5 above). So practical buffers would be 14 for a D/Sided Portable. An absolute minimum would be one FAT ie 3 buffers for the Portable. The maximum is 99. [Note the error in the Apricot RamDisk sheet part no 11582071 : it must be BUFFERS=nn not BUFFER=nn]

CONFIG.SYS   (Continued)

COUNTRY - To allow UK style dates

What? This is the enhancement in MS-DOS 2.11 when MicroSoft made it fully international. DOS 2.11 can be tailored to the national environment by setting the COUNTRY as the international telephone dialling code. Country simply affects how dates are dealt with by DOS : ie the format they are entered in, and how they are displayed.

Advice For UK use "country=44".

DEVICE drivers - To add extra "devices" to the Portable

What? Standard DOS includes its own drivers to communicate with standard devices such as the floppy disk drive, the keyboard, the screen etc. MS-DOS version 2 enables DOS to be extended by specifying additional device drivers (files on disk) to be loaded by a line in the CONFIG.SYS so that those additional "hardware" devices can be utilised.

   eg To install a mouse driver
          device=mouse.sys
       To install a "virtual" disk drive in RAM memory
          device=ramdisk.sys /1   for 64000 byte drive
       To install the speech recognition device
          device=speech.sys   as on Master Disk 2

Requires The appropriate device driver file (eg MOUSE.SYS) must be on the boot disk, otherwise how could it be installed when booting from the disk ?

RamDisk A RamDisk is a part of the micro's RAM memory is configured to behave as a disk drive. See page 24 for further details. Using RamDisk for "turbo-charging" WordStar and SuperCalc specifically is covered in their UserPrompt Guides.

FILES

What? An option which can usually be omitted. Only increase the number in the very unlikely event of a program warning "not enough handles". Note for experienced BASIC users : this does not affect files in Basic.

Defaults

The defaults provided by MS-DOS, unless there is an entry in CONFIG.SYS to specify otherwise, are: buffers=2, files=8, no devices, break=off, shell=\COMMAND.COM, no country (ie USA style dates). The default entries in the CONFIG.SYS provided by ACT were listed on page 10 above.

USING MS-DOS INTERNAL COMMANDS

CLearing the Screen (Portable S/Pack p40 & MicroSoft Pack p5-5)

Tip   When at the operating system level CLS [RET] is one way to get
        instant privacy if you have private information on the screen
        and a nosey parker approaching. (An alternative is [CTRL]
        [UP/DOWN CURSOR] to reduce the LCD contrast to illegibility.)

COPYing file(s) (Portable S/Pack p40, MicroSoft Pack p5-5 and the
        README.DOC release notes on Master Disk 1)

Same   The syntax for a copy onto the same disk is:
Disk
            COPY sourcefile destinationfile [RET]

        eg A>COPY DRAFT1.TXT DRAFT2.TXT [RET]
            This will create the destinationfile DRAFT2.TXT, an exact
            copy of the sourcefile DRAFT1.TXT.

Different The syntax for a copy onto a different disk is:
Disk
            COPY sourcefile \destinationfile /S [RET]

        The backslash before the destinationfile is to signify that
        the copy is to the ROOT directory. If you omit the backslash
        the copy will not be made, reporting "File cannot be copied
        onto itself".

Tip   If the copy is to have the same name as the original then do
        not enter the destinationfile name as it reduces disk swaps!

        eg A>COPY ONE.DOC \ /S [RET]
            This will allow for the copy of ONE.DOC to be made to
            the root directory on another (formatted) disk with the
            same name ONE.DOC. The screen will provide prompts to
            swap between the source disk and the destination disk.

Warning There is a limitation to the /S approach that it can not copy
        a file larger than 64Kb. Apricot now provide a utility called
        SCOPY to avoid this problem. You will have either to DISKCOPY
        the entire disk and delete the files you did not wish to copy,
        or else create a B: drive RamDisk and copy via it.

Errors Ensure you are not misled by the manual:

        (a) You must enter the destination file (or at least that the
            copy is to go in the root directory) when doing a single-
            disk copy to another disk:
            ie not COPY FILE1/S
               but COPY FILE1 \ /S [RET] or COPY FILE1 \FILE2 /S [RET]
        (b) Never try to use * wildcards - they just do not work!
            ie not COPY *.LET/S nor COPY *.*/S
            You have to copy the files individually, one by one.

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Internal MS-DOS Commands : Copy (Continued)

Warning A filename has to be unique in its own directory. Copy will
        overwrite existing identically named files without warning.

Operating Copy will only copy visible files, ie ones reported by a DIR
System   command. Hence it can copy COMMAND.COM and CONFIG.SYS, but
          not the hidden system files which make up most of the
          operating system. (See page 4 for the way to do this.)

RamDisk If you have configured part of the RAM memory as a B: drive
         this provides a convenient way to copy files from one disk to
         another by copying from the A: drive to the B: - then swapping
         over the floppy disk and copying back from B: to A:

Combining Files

As mentioned in the MicroSoft Pack COPY can "add" two files together:

        eg COPY ONE.DOC+TWO.DOC ONETWO.TXT [RET]

If no destinationfile is specified then a copy of the other file(s) is
appended to the first file specified:

        eg COPY ONE.DOC+TWO.DOC+THREE.DOC [RET]

The system DATE (Portable S/Pack p12/p41 & MicroSoft Pack p5-7)

Format The manual is, since MS-DOS 2.11, wrong. By having COUNTRY=44
        in CONFIG.SYS dates can be entered (and displayed by DIR
        commands) in traditional UK style : dd/mm/yy or dd/mm/yyyy.

        eg DATE 25/12/85 [RET]

        (NB If COUNTRY=44 has been omitted from CONFIG.SYS then dates
        will be USA style MM-DD-YY eg 12-25-85)

Use?   You should always ensure that the "system" date and time are
        correct as whenever you modify a file DOS updates the
        directory entry with the current date and time. Having these
        correctly set will be a great boon in finding which is the
        latest version of a file.

SET TIME The keyboard contains a battery powered clock. To initially
        set this (and subsequently to correct it): press [SET TIME].
        A bar will appear across the screen. Now use the grey numeric
        keypad to type the digits into the HH:MM DD/MM/YY. Then press
        the [TIME/DATE] function key.

        Whenever you turn on the Portable a "hand" asks for a disk to
        be inserted and for the TIME/DATE. Once you have put a boot
        disk in press [TIME/DATE] to update the Portable's clock with
        the time/date from the keyboard battery clock.

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Internal MS-DOS Commands (Continued)

DELeting file(s) (MicroSoft Pack p5-8)

Warning   Once you have deleted a file you can not retrieve that file without special utility programs (which are very thin on the ground for Apricot users : we have managed to get some IBM DOS utilities to work on the PC/XI), so be very careful with your typing especially when using wildcards.

If you do accidentally delete a crucial file that you must have back then do not do anything else that affects the space allocated on that disk (eg no copy or delete commands) and see if your dealer can help you get the file back.

Tip   When using * & ? wildcards do a DIR command with the same wildcards first to be sure which files will be deleted.

Privacy   Deleting a file with DEL does not actually erase the data that was in the file, it simply marks the filename in the directory as deleted and marks the clusters in the FAT as free for re-use. We personally have utilities which would allow us to examine that confidential data you thought you had deleted!

Tip   DEL will delete only visible files. So if you have a disk that has an operating system copied onto it but now want to use the disk as say a data disk, a DEL *.* will still leave around 40Kb full of hidden operating system files. Use Activity DISK Format Disk to completely clear it. You can use CHKDSK.COM to check if there are hidden files on a disk : there should always be one of zero length - the volume label (see page 17 below).

Getting a DIRectory (Portable S/Pack p41 & MicroSoft Pack p5-8)

Printout   You can get a printed directory listing. You may be using [CTRL]P to achieve this already, but a neater method is:

      DIR >PRN [RET]

This redirects the standard output (ie what you normally see on the screen) from the console to the printer.

DiskLabel   If you do a DIR /W >PRN [RET] command, and photo-reduce the printout enough, you have an ideal diskette label.

Scope   DIR does not list the files in a directory. It lists only those files which are not hidden and/or system files. If you use a CHKDSK /V [RET] you will see the hidden .SYS files not reported by DIR. You can use the [STOP] key to pause the screen display. (Note: For some reason the file HEADER.SYS which is normally a hidden system file was a visible file on the 4 Dixons Master Disks we tried.)

Internal MS-DOS Commands : Directories (Continued)

Size   The size of file reported is the actual file length in bytes. The file will probably occupy more disk space than this as disk space is allocated in "clusters" of 1024 bytes on the Portable. The "bytes free" is the actual space left in free clusters and so total of files + bytes free will not equal disk capacity.

PATH : Search other Directories (MicroSoft Pack p5-18)

Normally when you try to run a program (a .COM or .EXE file) or a batch file (.BAT) DOS will only look for that file in the current directory, and if not found will report "Bad command or file name". The PATH command will tell DOS to look in other directories as well. It is of most use on XI hard-disks. (More details in our XI & XI Guides.)

Floppy   Even on microfloppy disks with no sub-directories it may be useful to issue a PATH=A:\ [RET] command. Thus even if you are logged in to a B: RamDisk drive but want to use a utility on the A: drive you can do so by just typing the program name without needing to prefix its name with A:

Diary
Sketch   Unfortunately the LENVOl utility changes the path to \ (ie the root directory on the logged drive) cancelling your PATH=A:\

Changing the system PROMPT A> (MicroSoft Pack p5-19 or p5-22)

Usage   As the ACT manual says you can change the prompt simply by typing PROMPT followed by the text to change it to:
    eg   PROMPT I'm an Apricot Portable [RET]

Tip   This command is most useful on an XI with a MS-DOS hierarchical directory structure to be sure what sub-directory you are in, but is useful on any micro if you make use of sub-directories:
    PROMPT pg [RET]

Tip   If you ever end up with the cursor underlining every character or in reverse video then you can use the prompt command as a way to cancel it. These cursor attributes are set by an ESCAPE code (ie the ASCII character 027)
    eg   PROMPT $eq [RET]   would cancel reverse video
           PROMPT $el [RET]   would cancel underlining
           PROMPT $ez [RET]   clears and resets the screen

Default   To revert to normal prompt of logged drive> : eg A>
    PROMPT [RET]

R.Video   For a reverse video prompt forget about ANSI sequences and use Apricot specific escape codes (more details in our BATCH Guide)
    PROMPT epn$g$eq [RET]

REName & wildcards (MicroSoft Pack p5-22 or p5-25)
The ACT manual gives an example of REN *2.LST *2.PRN. This is wrong as the * wildcard will match all filenames - is the same as REN *.LST *.PRN

The system TIME   (Portable S/Pack p42 & MicroSoft Pack p5-26 or p5-28)

Usage   MS-DOS actually allows you to enter the seconds and hundredths
           of seconds in the format HH:MM:SS.cc.

SET TIME   Normally you would change the date and time with the
           [SET TIME] and [TIME/DATE] keys as described under Date above,
           rather than by entering either TIME or DATE internal commands.

TYPE to display files   (Portable S/Pack p42 & MicroSoft Pack p5-26 or
                        p5-28)

Usage   The quickest way to look at a text file, without having to
           load any program, is to use a TYPE command

           eg   TYPE AUTOEXEC.BAT [RET]

Printing   Some MS-DOS manuals suggest you can use type to print the file
           to the printer by redirecting the output

           eg   TYPE README.DOC >PRN [RET]

           but a more elegant way to print it is to copy it to printer

           eg   COPY README.DOC PRN [RET]

"Binary"   Where it says in the manual "if a binary file is displayed it
           will cause unexpected effects on the screen" it means: TYPE
           sends characters to the screen. If those characters are not
           intended to be displayable characters (eg if they form part of
           a sequence of machine instructions in a "binary" program) this
           can/will produce weird effects on the screen and even cause
           the computer to seize up : ie require [RESET] to be pressed.

Tip   Only use TYPE on files of text, and not on program files whose
           names end in .COM or .EXE.

Alter-   The MORE filter program is a good alternative way to view a
native   text file on screen, one screenful at a time (see p21 of our
           PORT-ACTIV Guide or p20 of our PORT-DIX Guide).

VERsion of MS-DOS   (MicroSoft Pack p5-27 or p5-29)

Version   The Portable should be running under "MS-DOS Version 2.11"

Verifying file copying   (MicroSoft Pack p5-27 or p5-29)

Usage   By use of the VERIFY command you can force a double-check
           on everything written to disk, to ensure it has been saved
           correctly.

Copying   When copying you can achieve the same effect by adding a /V
           parameter at the end of the copy line
           eg   COPY ONE.TXT TWO.TXT /V [RET]

Use it?   The time cost of turning it on is that all disk writes take
           about 60% longer, but at least it ensures that the data is
           written to disk properly. We always use /V with our COPY
           commands : better safe than sorry.

VOLume disk labels   (MicroSoft Pack p5-27 or p5-29)

"Volume"   is a DOS 2 enhancement. MicroSoft allocated an entry in the
           root directory for a user to be able to label a disk with up
           to 11 characters to assist in housekeeping. ACT have just
           woken up to this and Activity DISK Format Disk now allows you
           to specify your own volume label. The default is "Apricot" -
           to amend this use the [BACKSPACE] key and enter your own label
           before selecting the Format Disk icon.

Uses   It is an excellent way to control disks, and to label
           generations of disks.

Backing up & Speeding up file access   (BUT see page 12 above)

The COPY command has a use for making sure that your valuable files stay
"readable", and in making your operations faster.

WearOut   Any (micro)floppy disk will wear out with use. So your
           valuable files on disk are vulnerable to time (as well as the
           more commonly recognised perils facing disks).

Activity   Using the Activity DISK Copy Disk option to make a copy of a
           disk is one way to make a complete backup copy of a disk. The
           limitation of using this technique is that the copy is an
           exact image of the original disk. Two "problems" with the
           disk may still exist:
               a.   an area of the disk not yet allocated to a file may
                    be corrupt and so prevent the Disk Copy completing.
               b.   files which have become fragmented (ie non-
                    contiguous) remain just as fragmented on the copy.

COPY   A better way to backup a disk is to use Activity DISK Format
           Disk to re-format the disk to be backed up onto. If you wish
           to backup the operating system to the disk then use the Copy
           DOS option to do so. Now exit to the operating system and
           then use the internal COPY command to copy individual files
           across. (Although this is obviously very tedious on a
           Portable.)

Swap   Consider swapping over the roles of the disks so as to even
           out usage : ie instead of making a backup copy and filing that
           backup away, start using the "backup" and retire the original.

UTILITIES EDITORS

The Activity UTILITIES icon contains facilities to edit fonts, keyboards, icons and the system configuration. Using the System Configurator option was covered on page 7 above. You can use the other three utilities to edit and create three different types of file:

filename.CHR	character font files
filename.KB	keyboard table files
filename.ICN	icon files

This section clarifies how and why you might use these three utilities.

You should use your copy of Master Disk 1 or 3 to run these Editor programs. Like the Activity DISK program, once you have selected the appropriate icon and got the editor running with the 4 icons at the top of the screen you can remove the master disk and use another disk to load/save your work files. Like the rest of Activity you use a mouse or the grey numeric keypad to move around. Using the numeric keypad with the [SHIFT] key will move you to the furthest point in that direction.

CHARACTER FONT EDITOR

Why Use?	You may not like the way that individual characters are shown on the screen. This program allows you to amend the way that characters are visually represented. Each character on an Apricot Portable is represented by a pattern of dots in an 8 by 8 grid and this editor can edit those patterns of dots.
Manual	Portable S/Pack p24.
Back-ground	Each character on an Apricot's screen is held internally as a "byte" of data which has a numeric value between 000 and 255. There are standards for which value is which character – eg ASCII (American Standard Code for Information Interchange) defines 065 as a capital "A", with 097 as a lower case "a".
	The Character Font Editor allows you to set your own standards as to how those values are displayed : eg you could define it so that the code 065 is displayed as any pattern of dots in a grid of 8 dots by 8 dots.
Potential Usages	The default ACT character font provided as part of the operating system on the master disk represents 035 as an American hash or pound symbol – ie # . The sterling pound sign £ is relegated to the character 156. Unless you have a dot matrix printer which is fully IBM compatible it is unlikely that your printer will correspond to this. Hence you will probably wish to use the editor to change the code 035 to be shown as a sterling pound sign, and code 156 to be shown as an American hash sign.
	Another potential use is that your printer's font may not match the screen font exactly – use this utility to amend the screen font so it looks more like the printed output will.

Fonts	The ACT Master Disk 1 includes two fonts : ACT8X10 & ACT8X8. The 8x10 font was intended for the F1 (although this has now been amended to 8x8 as well) not the Portable and may be rejected by Portable utilities as it is the "wrong shape". [Dixons Master Disks have 2 additional fonts on Disk 4.]
Multi Fonts	You can access more than one font file : eg to mix various already designed characters from different fonts into one font. Simply keep accessing different Source fonts and combining them into the Target font. This is made easier by the "Move" command.
Guidance	The following comments on and corrections to the manual will help you understand how to use the program better:...
Folder	For the FONT editor there are no KEYS options. The filing cabinet is the rectangle headed "Fonts".
Source	Unless you specify another .CHR file the Source character font will initially be that included in the operating system that you booted from.
Target	The initial Target font will be a copy of that currently in force – ie picked up from the boot operating system.
Edit Icons	The GET command will get a copy of the character from whichever of the SOURCE or TARGET fonts is currently selected – ie you must select the appropriate one first. By contrast the PUT command only puts to an already selected position in the TARGET font.
	To transfer a character unchanged from the source to the target: select Source font character, select GET command, select another command (eg Draw/Write), select Target font character and then select PUT command.
Exiting	If you have made any changes to the target font and not saved them you will be asked if you are sure you want to leave the editor when you select another Activity icon at the foot of the screen. This should prevent you accidentally losing any of your editing.

KEYBOARD TABLE EDITOR

Why Use?	You may want the keyboard set up so that (a) what happens when you press a key when using a program corresponds with the legend on that key; (b) the keyboard provides shortcuts.
	eg [F1 HELP] for SuperCalc needs to be ? to provide help
	[F2 REPEAT] at operating system level should be [ESC] U
	[F9 FINISH] for WordStar needs to be ^KD to save
	This utility enables you to assign appropriate keystrokes to the 92 keys on the keyboard.

Manual   Portable S/Pack p31.

Keys   There are 9 [Fn] Function keys with legends already set
                      9 cursor control/editing keys
          These, the typewriter style alphanumeric keys, and the
          grey calculator style numeric keypad make up the 92 keys on
          the Apricot Portable keyboard.

Potential You would use the Keyboard Table editor to set up keyboard
Usages   files so they can be used to maximise efficient and quick use
           of the keyboard for particular programs.

Limits   Some programs set-up the keyboard themselves, thereby making
           any user generated .KB file irrelevant.

Guidance   The following comments on and corrections to the manual will
           help you understand how to use the program better:...

Printout   The printout produced by selecting the printer icon will list
           for each of the 92 keys what characters have been assigned to
           the NORMAL, SHIFT and CONTROL modes of that key, including the
           decimal ASCII values of those characters - these are required
           because most characters outside the range 033-126 will be
           unprintable. The 92 keys are numbered between 1 and 104 as
           follows:
                    1 - 8   F1-F4 F6-F9
                    9   TIME/DATE
                   15 - 33   Row 1   \ to +
                   34 - 51   Row 2   TAB to 9
                   52 - 69   Row 3   CapsLock to 6   (64=[RET])
                   70 - 86   Row 4   Shift to 3
                   87 - 97   Row 5   ESC to F5

Keystrokes You may assign only a maximum of 12 keystrokes to each
           position of a key.

Limit   There is an overall limit imposed by the way that keyboard
           tables work so that you cannot define an unlimited number of
           multiple keystrokes to the keyboard : ie you will run out of
           "string space".

Codes   The NORMAL/SHIFT/CONTROL boxes show in the top line the actual
           characters; in the second line the hexadecimal values
           corresponding to those characters : eg in ASCII an "A" is 065
           in decimal (base 10) and 41 in hexadecimal (base 16).

Source   Whenever you select a character in the source font the number
Font   of that character will be displayed in the top right hand
           corner as both a hexadecimal value prefixed by $ and as a
           three digit decimal value.

Locks   The CapsLock is normally set only for the alphabetic keys
          while a proper ShiftLock setting ought to work like a normal
          typewriter shift lock on all keys.

Local   Sometimes you need to send characters to the screen handler of
          the Apricot without them being sent to a program : eg the
          print screen command ([ESC]&) and cursor controls ([ESC]p etc)

ICON EDITOR

Why Use? This utility lets you design icons like those displayed by
          Activity for the Activity Tutor and Release Notes.

Back-   When the Activity environment is running it can display icons
ground   for the user to select. This is controlled by ACTIVITY.CON as
          described in the Portable S/Pack p35 and the UserPrompt PORT-
          ACTIV or PORT-DIX Guides. Such icons are created by the Icon
          Editor.

Usages   The only reason to design Icons is if you want them to be
          displayed on screen by Activity for the user to select : eg if
          you want an icon to represent the SuperCalc program or for a
          program you have written.

Manual   Portable S/Pack p34.

ACT   Three icons are already provided on Master Disk 1 : TUTOR.ICN,
Examples README.ICN and APRICOT.ICN.

Colours? The number of colours in the Palette will depend on whether
          you have Activity set with B-W for Black&White or for Colour.

"EDITED" FILE

With the editor programs described above you will have generated various
files: filename.CHR   character font files
            filename.KB   keyboard table files
            filename.ICN   icon files (used by ACTIVITY.CON)

If you would prefer to use your own edited font and keyboard (.CHR & .KB
files) instead of the default ACT provided ones then you can implement
them in two different ways:

Permanently:
The .CHR and .KB files can be incorporated into the DOS on a disk using
the Activity UTILITIES Operating System Configurator option so that they
come into force when you boot from that disk.

Temporarily:
You can bring .CHR and .KB files temporarily into force either using the
"System" icon within the appropriate Editor program, or using the FONT
and KEYS utilities (see UserPrompt PORT-ACTIV or PORT-DIX Guides).

AUTOEXEC.BAT

As you probably know if there is a batch file called AUTOEXEC.BAT in the root directory of the disk you boot from then it will be automatically executed. ACT include just a command to run ACTIVITY in their AUTOEXEC.BAT on all the Master Disks.

If there is no AUTOEXEC.BAT in the root directory then you will be asked to enter the DATE and TIME. These should already be correct if you have used the [TIME/DATE] key. Otherwise enter the correct Date and Time.

You may create or edit your own AUTOEXEC.BAT file using the EDLIN program, SuperWriter (System file mode) or WordStar (non-document mode). As AUTOEXEC's tend to be reasonably short you might also use the COPY command to create one by copying from the console (ie the keyboard) to the file:
eg   A>COPY CON AUTOEXEC.BAT [RET]
      CLS [RET]
      REM Here is an autoexec.bat file [RET]
      [CTRL]Z [RET]
(Holding down [CONTROL] and pressing Z should produce ^Z on screen)

Things you might put in an AUTOEXEC.BAT

a.   To avoid the Portable displaying the commands in the batch file as it executes them include the following line at the start:
      ECHO OFF

b.   If you use sub-directories often then also include:
      PROMPT=pg

c.   If the amount of free memory is not critical you might include the line:
      GRAPHICS
in your AUTOEXEC.BAT so it is ready loaded for the DIARY, SKETCH and GW-BASIC programs which require it. If a graphics program ever "crashes" reporting "Divide overflow" it is because the GSX Graphics program has not been loaded first : ie you need to have run GRAPHICS first.

d.   You could end your AUTOEXEC.BAT with a line to run another batch file to provide an on-screen menu for your disk (eg Master Disk 3) which listed the programs available:
      MENU

   where MENU.BAT was a batch file containing:
      Echo off
      Echo [ESC]z
      Echo MASTER DISK 3 MENU
      Echo To run Async communications   : type ASYNC [RET]
      Echo To run GW-BASIC language   : type GWBASIC [RET]
      Echo To run ACT's Activity interface : type ACTIVITY [RET]

Batch files are a mammoth subject, and are covered by the UserPrompt BATCH Guide (which includes how to put [ESC] into a batch file).

USEFUL REMINDERS ?

This page does not seek to cover new ground – we hope that you already know all the following as they are useful tips which we use time and time again, but just in case you missed them, or their significance:

DIR /W	Displays just the filename.ext in 5 columns.
DIR /P	Displays a normal directory 23 lines at a time. (Far better and easier than using the [STOP] key.)
[ESC] U	Repeats the last command typed at operating system level. ie press [ESC] and then type a capital U eg A>DIR /W [RET] then A>[ESC] U [RET] after you've swapped the disk in A: See section 6.1 (p6-2) of the MicroSoft Pack for others.
[CTRL]C	Abort a program or batch file. Probably will not work during a well written program!
[CTRL]X	Cancel the command being typed in at the operating system level : quicker than backspacing.
Screen Print	Pressing [SHIFT] [F6 PRINT] function key ought to do a sort of "screen-dump" ie print the characters from screen to the printer. In fact it first sends a form feed to the printer (ie winds the paper on before starting to print). This key may still work when some programs are running and is an "quick and nasty" way to generate some documentation of a textual screen display.
Disk Labels	We do use the coloured disk labels to colour-code program and data disks, etc. We also write on the disk labels upside-down so that the disks can be stored in their disk box upside down leaving the colour coding and the writing easily visible.
Disks	We only ever buy double-sided disks which are clearly and permanently labelled by the maker as double-sided. This makes it practical to format as single-sided (eg to use on an Fle) when required, but to be sure it is safe to format as double-sided at any time later.
REN	Want to change the name of a file ? Use REN eg REN JAN.TXT JANUARY.DOC [RET] Do not use COPY to achieve this is as it leaves the original named file on disk needlessly occupying space.

>PRN	You can redirect the standard output from many commands & utilities from the screen to the printer by adding a >PRN to the command. Eg to document a disk in drive B
	    A>DATE >PRN [RET]
	    [RET]
	    A>TIME >PRN [RET]
	    [RET]
	    A>DIR B: >PRN [RET]

PORTABLE EXPANSION & PERIPHERALS

MEMORY

A standard Portable comes with 256Kb or 512Kb of RAM memory. There is however an expansion socket on the mother board which enables you to add one of the various expansion/enhancement boards. This socket is inside the "Cable Manager" above the parallel/serial sockets. If you want to add more than one board then you will need the ACT optional expansion box (which we have never seen and which is not in their price list).

Apricot RAM memory expansion boards are made by ACT and by others, and you can plug one into the expansion socket within the Portable in a matter of a few minutes. A 256Kb board costs around 150-200 pounds. The extra memory could be used in two ways:
-    extra RAM workspace for your programs
      eg   for larger SuperCalc spreadsheets
-    as a RamDisk electronic or "virtual" drive.

RAMDISK

The Portable has just one double-sided 3.5" microfloppy drive. This can make disk to disk transfers, and running some programs inconvenient and slow. A "RamDisk" is a part of the RAM memory which is allocated as being a "drive" - so on the Portable a RamDisk would be used as if it were a "B:" drive in addition to the normal "A:" physical drive.

A RamDisk is set up by using the RAMDISK.SYS device driver file provided by ACT on the Portable Master Disk 1. This requires the following line to be added into the CONFIG.SYS file on the disk you boot up the Portable from:

        DEVICE=RAMDISK.SYS /n

where "n" is the number of 64Kb blocks of the RAM memory which you wish to allocate as being a RamDisk. So a typical CONFIG.SYS which utilised 128Kb of the Portable's RAM as a RamDisk would contain:
        BUFFERS=14
        COUNTRY=44
        DEVICE=MOUSE.SYS   (omit this line if you have no mouse)
        DEVICE=RAMDISK.SYS /2

Once booted up you could copy your program files to the B: drive and use the A: drive purely for your data disk. Obviously there is even more potential to allocate RAM to RamDisk the more RAM memory you have.

CORDLESS MOUSE

This currently costs 95 pounds. It can be quicker and more convenient than the numeric keypad for using the following ACT programs:
        Activity interface and utility programs
        Sketch & Diary

Other than this there is very little commercial software which currently uses a mouse driven interface : ie typically it's a waste of money.